Lake Iola

Scott County

Supplemental Survey Report

Date of Survey: November 7, 2007

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Survey Objectives: To monitor fishery following recent supplemental stockings of various sizes of largemouth bass into Lake Iola (Table 1).

Methods: Fish collection effort equaled 0.25 h pulsed DC daytime electrofishing with two dippers along the shoreline of the west basin of Lake Iola (9 acre). Total length was measured to the nearest 0.1 in. Scales were collected from largemouth bass and bluegill for age and growth determination. Surface water temperature was 50°F. Secchi disk reading equaled 2.25 ft.

Summary: A total of 238 bluegill (Table 2) was collected at a rate of 952.0/h. The bluegill Proportional Stock Density (PSD) of 7 is lower than the PSD of 10 observed in 2006 (Lehman and Kowalik 2008). Only 3% of the bluegill (7 fish) in this survey were quality-size fish compared to 10% (14 fish) collected in 2006. Bluegill were growing well through age 2 but after that growth dropped below average (Figure 1).

A total of 27 largemouth bass was collected (Table 2). Catch rate equaled 108.0 bass/h. The bass PSD of 6 is far below the range of 40 to 70 desired for a balanced fishery as defined by Anderson and Neumann (1996). Fin clips indicated two bass were stocked fish. Bass growth is satisfactory for southeastern Indiana (Figure 2).

Following the survey in 2002, it was recommended that 1,800 bass fingerlings be stocked annually into Lake Iola for the next few years in an attempt to rebuild the bass population to levels adequate to control bluegill (Lehman 2003). Decline of bluegill catch rates since 2002, as well as improved bass catch rates, suggests that this strategy is working (Figure 3). There is a requirement now, however, that all bass be marked before they are stocked into Iola, so that stockings can be evaluated better. The question is; are the bass we are catching in our surveys stocked bass or bass that recruited into Iola's population through natural reproduction.

It is possible to mark small bass fingerlings with Oxytetracycline Hydrochloride (OTC). Calcified bone of marked fish produces a yellow fluorescent mark under ultraviolet light. This marking procedure is expected to be less stressful on fingerlings than marking them with a finclip; therefore, survival should be better.

It is recommended, therefore, that the option of marking bass fingerings with OTC be investigated and that any bass fingerlings stocked into Lake Iola be marked whether requested by management or dumped as excess fish by the hatchery unit.

It is also recommended that the entire shoreline of Lake Iola be sampled with DC night electrofishing to better sample the fishery.

Channel catfish also exert some predatory pressure on the bluegill. Therefore, it is recommended that the option of stocking more channel catfish be investigated.

Literature Cited:

Anderson, R. O. and R. M. Neumann. 1996. Length, weight, and associated structural indices. Pages 447-481 *in* B. R. Murphy and D. W. Willis, editors. Fisheries techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.

Lehman, L.L. 2003. Lake Iola Fish Management Report, 2002. Fisheries Section, Indiana Department of Natural Resources, Indianapolis, Indiana. 13 pp.

Lehman, L.L. and C. R. Kowalik 2008. Lake Iola Supplemental Survey Report, 2006. Fisheries Section, Indiana Department of Natural Resources, Indianapolis, Indiana. 7 pp.

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Approved by: Brian M. Schoenung, Fisheries Supervisor

Date: August 12, 2008

Table 1. Recent largemouth bass stocking record by DFW at Lake Iola prior to November 11, 2007 survey. Fingerlings were not available in 2004. Bass stocked in 2007 were required to be marked with fin clips.

NUMBER	SIZE (in) &/or mark	LENGTH RANGE (in)	STOCKING DATE
1,811	3.48	2.7 - 4.3	November 3, 2003
12	11.3	8.5 -14.1	April 14, 2004
28,800	0.75	Fry	May 27, 2005
3,090	2.22	2.0 - 2.4	June 24, 2005
4,540	1.83	1.5 - 2.2	June 24, 2005
31	8	----	November 3, 2005
1,807	3.8	3.3 - 4.3	November 3, 2005
40	LV finclip	Broodstock ≥14	May 25, 2006
97	8.1	4.8 – 11.4	November 3, 2006
1,704	3.8	3.4 – 4.2	November 3, 2006
1	LPRV finclip	----	April 18, 2007
25	LP finclip	2.8 – 14.3	April 18, 2007
121	14.1 RP finclip	13.2 – 14.8	May 18, 2007
14	10.1 RP finclip	8.0 – 11.0	November 5, 2007

Table 2. Number, relative abundance, and length range of fishes collected by DFW at Lake Iola November 11, 2007.

SPECIES	NUMBER	PERCENTAGE	LENGTH RANGE (in)
Bluegill	238	86.8	1.6 – 6.3
Largemouth bass	27	10.8	3.6 – 12.3
Longear sunfish	1	1.2	5.4
Green sunfish	1	0.6	5.3
Total	267		

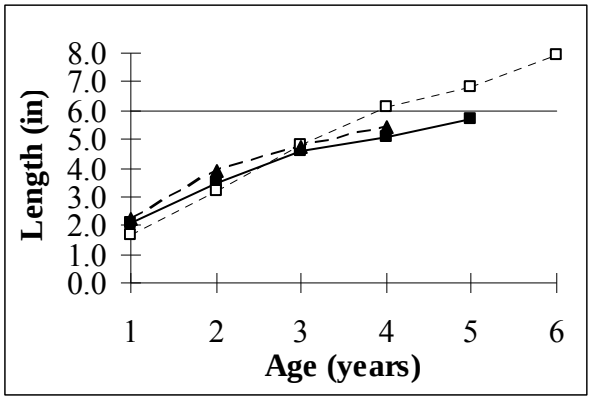

Figure 1. Lake Iola bluegill growth from 2007 survey (solid line) compared to 2006 survey (dashed line) and to average bluegill growth observed in Fish Management District 8 impoundments (dotted line).

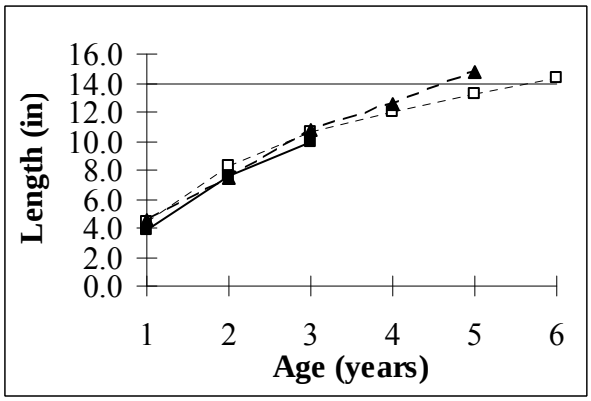

Figure 2. Lake Iola largemouth bass from 2007 survey (solid line) compared to 2006 survey (dashed line) and to average largemouth bass growth observed in Fish Management District 8 impoundments (dotted line).

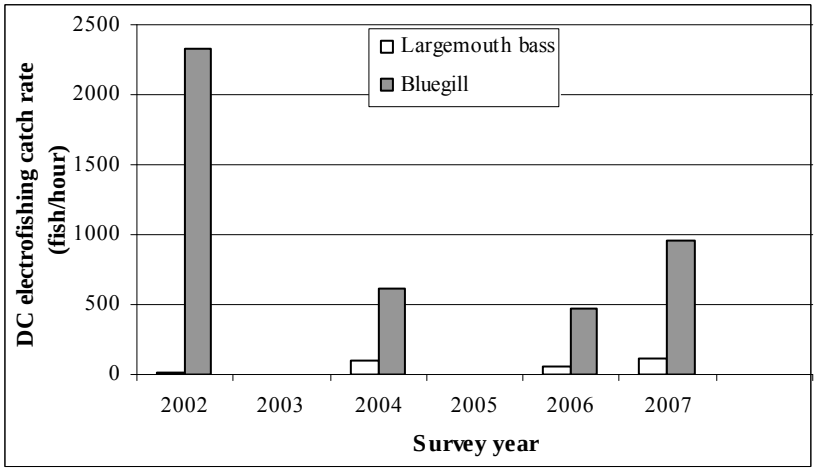

Figure 3. Catch rates for largemouth bass and bluegill at Lake Iola. Bass catch/h ranged from 20 to 108. Bluegill catch/h ranged from 468 to 2,330. 2002 survey was in July; remaining surveys were in October or November.

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF: Bluegill Lake Iola 11/7/07									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5	1	0.4	<0.01	0	19.5				
2.0	14	5.9	<0.01	0	20.0				
2.5	93	39.1	0.01	0	20.5				
3.0	**56**	**23.5**	**0.02**	**1**	21.0				
3.5	**15**	**6.3**	**0.03**	**1, 2**	21.5				
4.0	**7**	**2.9**	**0.04**	**2**	22.0				
4.5	**14**	**5.9**	**0.06**	**2**	22.5				
5.0	**17**	**7.1**	**0.08**	**2, 3, 4**	23.0				
5.5	**13**	**5.5**	**0.11**	**3, 4, 5**	23.5				
6.0	6	2.5	0.15	4, 5	24.0				
6.5	2	0.8	0.19	4, 5	24.5				
7.0					25.0				
7.5					25.5				
8.0					26.0				
8.5					TOTAL	238			
9.0									
9.5						PSD = 7/107(100) = 6.5			
10.0									
10.5						Bluegill Fishing Potential Index = 13			
11.0									
11.5						%≥ 6.0 inches = 7/238100) = 2.9			
12.0									
12.5									
13.0									
13.5						Too many small bluegill are present			
14.0						for a balanced population.			
14.5									
15.0									
15.5									
16.0									
16.5									
17.0									
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	**952.0/hr**	GILL NET CATCH	N/A	TRAP NET CATCH	N/A

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF: Largemouth bass					Lake Iola		11/7/07		
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5					19.5				
2.0					20.0				
2.5					20.5				
3.0					21.0				
3.5	1	3.7	0.02	0	21.5				
4.0	1	3.7	0.03	0	22.0				
4.5	1	3.7	0.03	0	22.5				
5.0	1	3.7	0.04	0	23.0				
5.5	3	11.1	0.07	0	23.5				
6.0					24.0				
6.5	1	3.7	0.09	1	24.5				
7.0	1	3.7	0.14	2	25.0				
7.5					25.5				
8.0	2	7.4	0.24	2	26.0				
8.5	1	3.7	0.28	2	TOTAL	27			
9.0	2	7.4	0.32	2					
9.5	3	11.1	0.41	1, 2		PSD = 1/17(100) = 5.9			
10.0	2	7.4	0.48	1, 2					
10.5	4	14.8	0.57	**2***, 3		%≥ 14 inches = 0/27(100) = 0.0			
11.0	1	3.7	0.70	3					
11.5	1	3.7	0.87	**3****		*1 age-2 bass had an LP finclip			
12.0	1	3.7	0.78	3					
12.5	1	3.7	1.05	3		**this age-3 bass had an RP finclip			
13.0									
13.5									
14.0									
14.5									
15.0									
15.5									
16.0									
16.5									
17.0									
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	108.0/hr	GILL NET CATCH	N/A	TRAP NET CATCH	N/A

Species **Bluegill**	YEAR CLASS	Number of fish aged	SIZE RANGE	BACK CALCULATED LENGTH (inches) AT EACH AGE							
				1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Intercept= 0.8"	2006	5	3.2-3.6	2.2							
	2005	11	3.6-5.0	2.3	3.5						
	2004	3	5.1-5.5	1.8	3.4	4.8					
	2003	4	4.9-6.3	1.9	3.5	4.6	5.2				
	2002	6	5.6-6.3	2.1	3.5	4.3	5.0	5.7			
	AVERAGE LENGTH			2.1	3.5	4.6	5.1	5.7			
	NUMBER AGED			29	24	13	10	6			

Species **Largemouth bass**	YEAR CLASS	Number of fish aged	SIZE RANGE	BACK CALCULATED LENGTH (inches) AT EACH AGE							
				1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Intercept= 0.8"	2006	3	6.3-10.0	3.6							
	2005	11	6.8-10.5	3.7	7.5						
	2004	5	10.5-12.3	4.1	7.7	10.0					
	AVERAGE LENGTH			3.8	7.6	10.0					
	NUMBER AGED			19	16	5					

*Not included in average length calculations.